

BOARD OF FORESTRY AND FIRE PROTECTION

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**Forest Practice Committee**

August 26, 2014

**Staff Report: Heavy Equipment Classification for Water Course and Lake Protection Zones;
Feller Bunchers**

A request was submitted to the Board in 2007 to consider developing new regulatory standards that would allow the use of feller bunchers within Watercourse and Lake Protection Zones (WLPZ). This issue has resided as a FPC Priority 3 item since that time. The problem is predicated upon the thought that feller bunchers, as well as other mechanized harvesters, do not pose the same level of risk to environmental attributes associated with riparian corridors as other equipment considered “heavy equipment”, and therefore should not be regulated in the same manner.

A feller buncher is a self-propelled machine with a cutting head that is capable of grasping multiple stems and strategically placing the harvested stems in an advantageous location for skidding purposes. Feller bunchers can be either wheel or track propelled. Generally, wheeled machines are utilized in areas where very small material is being harvested, such as biomass sales, whereas tracked machines supporting a boom operated cutting head are utilized on commercial sawlog sales. The use of feller bunchers has increased over the last several decades due to a general reduction in piece size and an increase in acres treated for fuel reduction on private and public lands.

The standard rule 14 CCR 916.3 (c) [936.3 (c); 956.3 (c)] states that “the timber operator shall not construct or reconstruct roads, construct or use tractor roads or landings in Class I, II, III or IV watercourses, in the WLPZ, marshes, wet meadows and other wet areas unless when explained and justified in the THP by the RPF, and approved by the Director.”

Feller bunchers are designed to not be limited to tractor roads. These machines are quite mobile and are intended to traverse throughout the forested landscape without construction or reconstruction of tractor trails. Feller bunchers are designed to, and utilized for, harvesting smaller diameter trees in either groups or singly, and placing them in “bunches” for a forwarder, skidder, or tractor to skid away. Feller bunchers do not skid harvested timber or have the ability to disturb soil via fixed or angle blades as do other harvesting machinery.

Feller bunchers are also limited to slopes that are generally <40%, given that they have a higher center of gravity when compared to harvesting machinery that is designed for skidding purposes. In addition, feller bunchers with booms supplement their ability for low impact navigation of terrain by offsetting the weight of the machine through “lifting” or propelling the machine with the boom. The hydraulic booms can literally be placed on the forest floor, stump, or other stable surface and aid the machine in turning, ascending or descending topography. This displacement of weight further limits the potential for soil disturbance and compaction.

Additionally, feller bunchers, especially tracked machines, have the ability for a very tight turning radius. Powering a single track can result in very tight, nearly “in place” turning. While this technique does provide for extreme mobility, it also can result in soil disturbance and localized furrowing.

Feller bunchers, when compared to other machines utilized in timber harvest activities, provide the following potential benefits:

- Reduce the risk of timber being accidentally felled towards the watercourse as a result of hand falling.
- Reduce the damage to residual timber and vegetation due harvested trees being laid in openings, away from timber and vegetation, or outside of the WLPZ.
- Reduce the damage to residual timber and vegetation as a consequence of endlining, which can result in damage as a result of dragging logs, out of the WLPZ against residual trees and over understory vegetation.
- Reduce the amount of soil disturbance from furrowing due to the reduction of endlining logs out of the WLPZ.

The Board has recognized the benefits associated with feller bunchers during past regulatory actions. In the development and adoption of the Anadromous Salmonid Protection (ASP) Rules, the Board recommended the use of this type of machinery for operations within Inner and Outer Zones for Class I watercourses as a Preferred Management Practice. In addition, the Preferred Management Practice was also adopted for operation in WLPZs of Class I watercourses with flood prone areas or channel migration zones (Refer to 14 CCR 916.9(f)(2)(D); 916.9(f)(3)(E)(2) and 916.9(f)(4)(D)).

Staff Recommendation:

Staff recommends that consideration be given to existing regulation contained in the ASP Rules if the Forest Practice Committee determines that a regulatory action is appropriate

to address this issue. Of particular concern would be the allowance of feller buncher operations within the core zones of Class I and Class II watercourses within ASP watersheds and review of the existing language in the previously identified Preferred Management Practices for Class I WLPZs.

Existing Regulation for purpose of Reference:

14 CCR 916.9(f)(2)(D) & 916.9(f)(4)(D)

(D) Preferred Management Practices in the Inner and Outer Zones: When timber operations are considered pursuant to 14 CCR §§ 916.3 [936.3, 956.3], subsection (c) and 916.4 [936.4, 956.4], subsection (d), the following Preferred Management Practices should be considered for inclusion in the Plan by the RPF and by the Director:

1. Preflagging or marking of any skid trails before the preharvest inspection;
2. Heavy equipment should be limited to slopes less than 35% with low or moderate EHR;
3. Use feller bunchers or hydraulic heel boom loaders which do not drag/skid logs through the zone;
4. Minimize turning of heavy equipment which would result in increased depth of ground surface depressions; and
5. Use mechanized harvesting equipment which delimb harvested trees on pathway over which heavy equipment would travel.

14 CCR 916.9(f)(3)(E)(2)

2. Minimize Yarding and Skidding: Skid trails, yarding corridors, falling activities, and log yarding should not alter the natural drainage or flow patterns. EEZ of 30 feet should be applied near side channels and areas of ponding. Very limited, pre-flagged, pre-approved prior to falling skid trails shall be used and abandoned so as to minimize risk of becoming new secondary channels by flood flows. Minimize or exclude, to the extent feasible, tractor skidding/crossings over, through, or along secondary channels (protection of overflow channels is a key element). Locate tractor roads on high ground areas to the greatest extent possible. When feasible, use feller bunchers which do not drag/skid logs through the zone, minimize turning of equipment which would result in increased depth of ground surface depressions, and utilize mechanized harvesting equipment which delimbs harvested trees on the pathway over which equipment would travel. Cable yarding corridors should be located at wide intervals consistent with practices that use lateral yarding. Full suspension should be used when possible.